



*John Griffiths gives his GT the Pro treatment...*

Peter Cambridge has one heck of a CV when it comes to vehicle dynamics. Sadly made redundant by Prodrive last year along with a large team of people, he's now busily applying his consummate skills as a freelance expert, working directly for car manufacturers such as Jaguar as well as the Ministry of Defence perfecting the suspension on their many and varied vehicles. However, the part of his work I was particularly interested in was the application of his knowledge directly for the enthusiast motorist. During his work with Prodrive on the Brera S, Peter soon discovered the massive enthusiasm among Alfa Romeo owners, owners who, like me, will actually put up with more than the odd flaw in their cars strangely enough. Well, now thanks to Peter's expertise, it's possible for to directly improve one or two of those.

People who know me know I adore my GT Q2. It's the best Alfa I've owned in 25 years, a tremendous all-rounder with great looks, swift performance, 40mpg economy, and cracking handling too with its excellent Torsen diff. Essentially, it's one of the best Alfas I've

driven in that time too, and that is a lot! Now, having heard Peter's talk at our local Section meeting at the end of last year about the work done on the Brera at Prodrive, I was very interested to hear what might be done on my own car. With two hungry teenagers to feed, my budget won't go to a full set of Bilstein dampers and Eibach springs, but it would be good to check that the wheels are pointing 'straight' to start with, and then to see if some clever wheel alignment adjustment would work on it too.

Working with ProTyre, the growing chain of highly professional tyre specialists, Peter has developed a series of alignment settings that can be applied to various Alfa Romeos using ProTyre's impressive camera alignment equipment. He's already worked his magic on a number of friends' cars in my AROC Section, including a GTV 3 litre, 156 GTA and Brera, but hadn't done a GT before. With its 156 undercarriage of course it would be very similar to the GTA, but with less nose weight.

Arriving at ProTyre in Warwick, I was immediately

impressed by the smart appearance of the place and the polite staff there. After greeting Peter in his German car (we'll get him in an Alfa one day!) my GT was soon up on a ramp. The guys swiftly attached some strange-looking 'dishes' which were covered in spots to all four wheels, aligning them with a pair of cameras mounted on a moving platform slightly above and ahead of the car. This also had a PC, screen and printer mounted on it too.

Within moments, the car was rolled backwards and forwards, and the steering turned to the left and then the right. No need to jack a car up here! Data from the cameras focusing on the dishes was captured and the technician printed out the current state of the cars alignment (often referred to as tracking.)

Now, I'm not going to dive into a complex explanation of vehicle alignment, but quickly; Camber is how much tyres point in or out at the top when viewezisplacement from the vertical axis of the suspension of a steered wheel" and has a big effect



on steering feel. (Have I lost you? Me too nearly!). 'Toe' is the angle a wheel has in relation to its forward movement. The latter is what people often believe to be solely responsible for excessive tyre wear – excessive 'toe out' (commonly set at the factory on Alfas) wearing the inside edge, 'toe in' wearing the outside edge. Now, Peter is at pains to explain, it's not just toe that has effect on wear and steering response, it's the combination of all three factors.

Now, my car got precisely 17,950 miles out of its front set of tyres (225/40ZR-18 W Pirelli P-Zero Rossos), a figure to make many a 159 and Brera owner rather envious I gather. Sadly by that time the extreme inside edge of the right front was through to the canvas, I was glad I checked! Strangely there was a full 4.5mm of tread left on the outside edge.



After calling up the GT's recommended factory settings on the PC, which did indeed include a few minutes of toe-out on the front (a minute being a 60th of one degree, so a relatively tiny amount), it was fascinating to compare its existing settings recorded, very rapidly, by the system. The car's 'thrust angle' (its direction against the straight ahead) was slightly out by 6 minutes and its Steer Ahead measurement too was three minutes off-set to the left. Its actual toe angle was 6 minutes toe out on the left front, but 1 minute toe in on the front right... Rears both had toe out (9 minutes left, 21 right), all "within spec". However, basically it wasn't running quite straight about its centre axis, explaining a slight tendency to 'wander' on certain roads, like motorways!

Now, the clever computer, as well giving standard manufacturer setting data, also gives illustrations to the engineers on how to physically adjust various settings. As with many cars, you cannot adjust all of the aspects of camber, caster however. With those two you normally have what you have, and you accommodate it with specific toe settings. Peter and the guys set about doing just that. Rear first; toe adjusted by spanners on the GT's clever aluminium multi-link rear suspension, here on Peter's recommendation from slightly 'out', to slightly 'in' by 14 minutes. With the car lifted up high on the flat ramp, Harry the engineer could see how his spanner adjustments directly affected the settings on the PC screen, making fine adjustments until set as required.

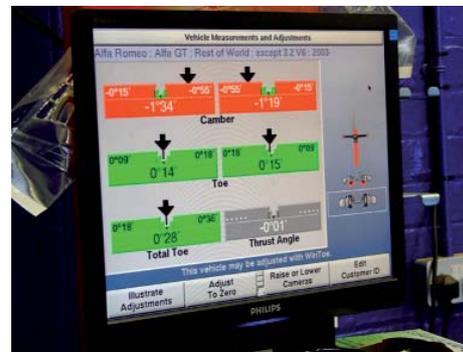
On to the front then, and a touch of toe in (4 minutes) applied on both sides, again, accounting for the car's Camber and Caster angles. Peter told me this



was key in reducing that 'Alfa wander' and livening up the initial turn in. Final settings from front and rear, gave a perfect zero on thrust angle and steer ahead, so the car would truly track straight, with the camber, caster and toe now working in harmony.

Then, road test time! Being in Warwick, what better place than on the many varied byways and back roads near the Prodrive base used with great effect on the Brera S, Aston Vantage Prodrive, countless UK edition Subarus and Mazda RX-8 PS, to name a few. I drove first and was soon in delight. My GT's previous slight 'delay' in response in turning into a bend had vanished. Now, it wasn't that the car's steering was 'bad' in anyway particularly, indeed it was so good it influenced my purchase in the first place, but now it was just like thought control! Smooth surfaces were dispatched with aplomb, then on to a string of 90 degree bends which could be taken really easily at speed. Bumpy surfaces next. Peter noted the GT has a real 'sporting' suspension set up rather than the more relaxed, ahem, 'GT' characteristics of the standard Brera for instance. (The Q2 model, including my BlackLine LE version, has the 'sports' suspension set up, so is a tad firmer to the standard car's settings.) Over bigger undulations taken at speed, the car could be felt using its bump-stops to good effect to prevent any bottoming. Peter was most impressed by the body control, lacking any sharp 'jarring' that can afflict some cars. I let Peter take over the wheel for the journey back and he immediately enjoyed the car's torque delivery as we jetted down the road, and that instant response to steering inputs.

Another great benefit was the cure of the car's desire to 'wander'. Driving home on the M69 I could almost have almost let the car do it itself, hands-free, whereas normally I would have been giving subtle steering inputs far more often. Much better and safer.



All in all, though the adjustments may have been relatively slight, the car felt surprisingly better to drive on all types of road.

So, the good news. You can have the benefit of Peter's experience now off-the-shelf with a specially created database of geometry setting for a vast range of Alfa models. That is available at a growing number of ProTyre outlets on your 'modern' Alfa, and at a cost of £98 including VAT, not far above the standard, and inferior, 'laser' tracking available at some tyre centres or (whisper it) dealerships. For a group of AROC enthusiasts, perhaps with classic models as well as the newer ones, Peter can also come along too for a modestly higher charge per car to perfect things. (Section Secretaries, how about that for an idea for an event? Just contact me to start with. Oh, and I'm not on commission – honest!)

Another thing – have you spent money lowering your Alfa, perhaps had the springs or dampers changed, fitted different anti-roll bars or done any other expensive suspension work? Why not get the best out of it now by having the alignment set properly as all of these things can have a significant impact. Excuse the pun, but as my experience proves, just a few minutes can make a real difference.

John Griffiths

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| Magnet House      |                         |
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| Tel: 01928 622930 |                         |
| Work Order ID     | PCA DYNAMICS            |
| Vehicle (VIN)     | ALFA ROMEO GT           |
| License           | FE08 CEA                |
| Mileage           | 20215                   |
| Technician        | HH                      |
| Date              | 2010-March-19 04:13p.m. |



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